



# The Science of Learning & Veterinary Medical Education

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## Anticipation Guide

Directions: For each of the following 2 sentences,

- Agree
- Disagree
- Edit into agreement

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## Anticipation Guide

1. Deep learning is fostered by cases, lecture, and discussion
2. I have learned my best problem solving through trial and error, textbooks, and professional development.

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Meaning



4

## Words

Meaning is always inside out.

Tired

~~Sleep~~  
Bed

Comfort

Awake

That's all!  
Eat

Wake

Dream

Slumber

Night

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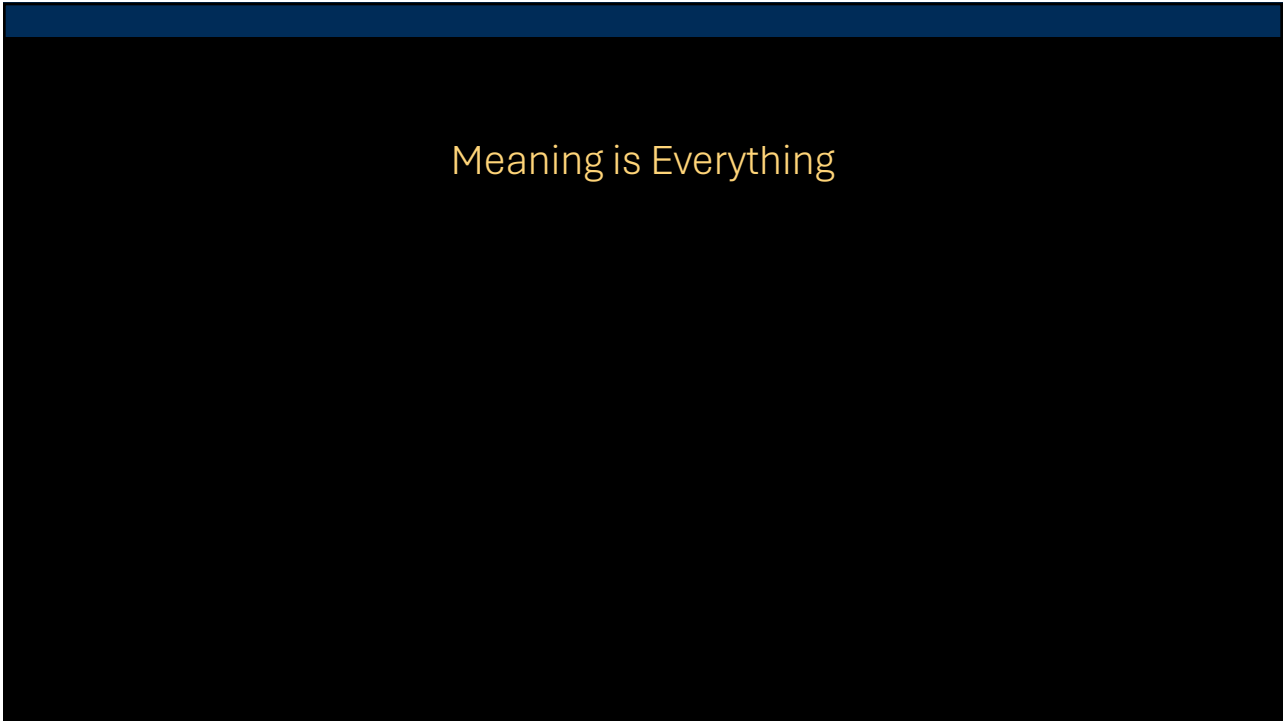
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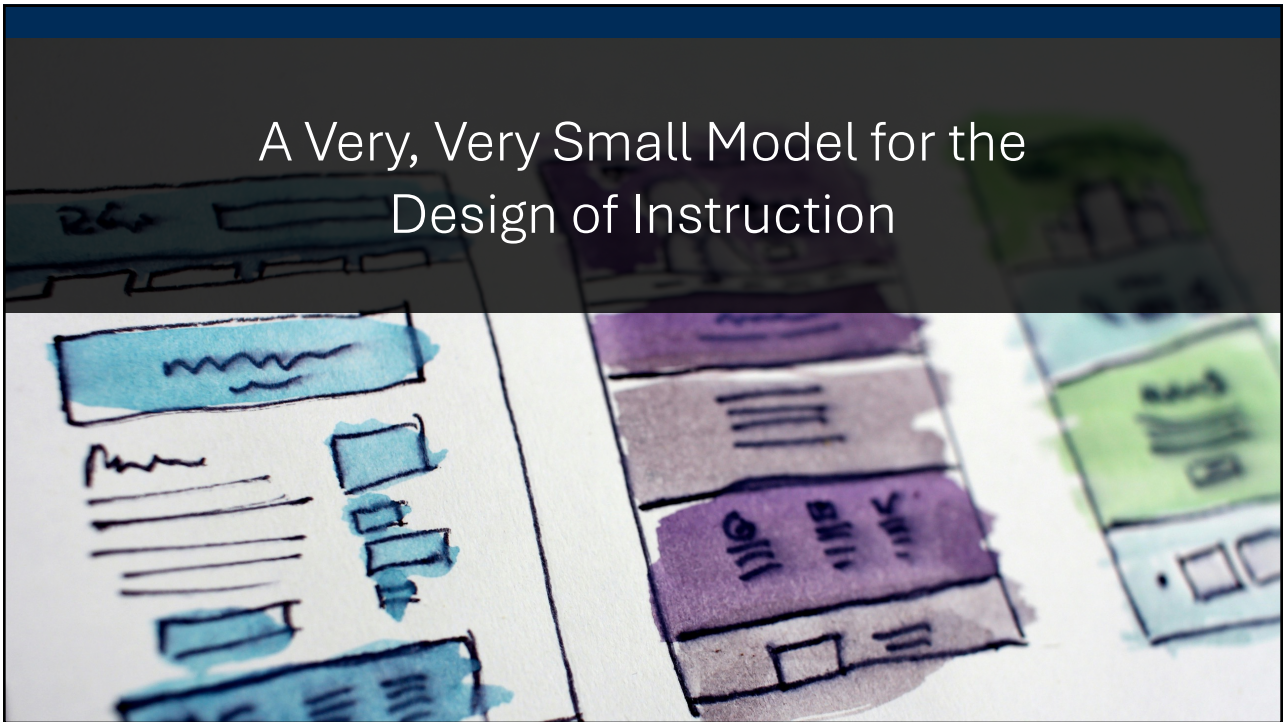
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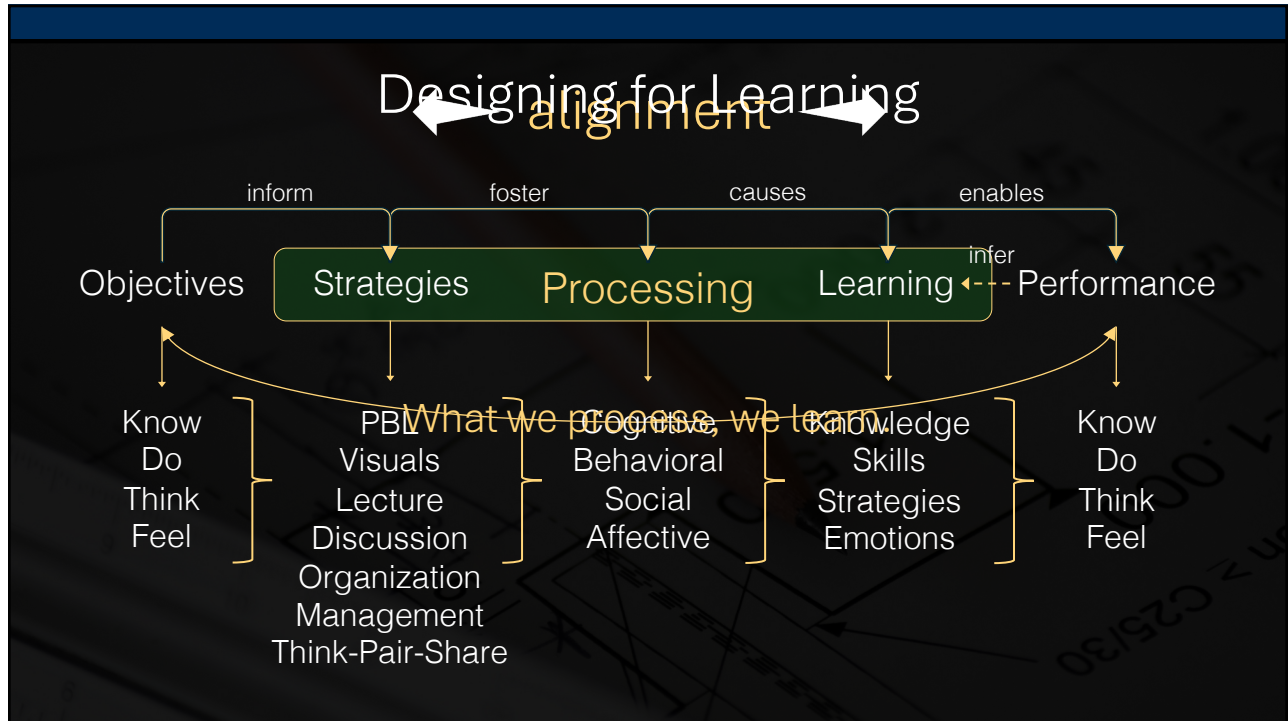
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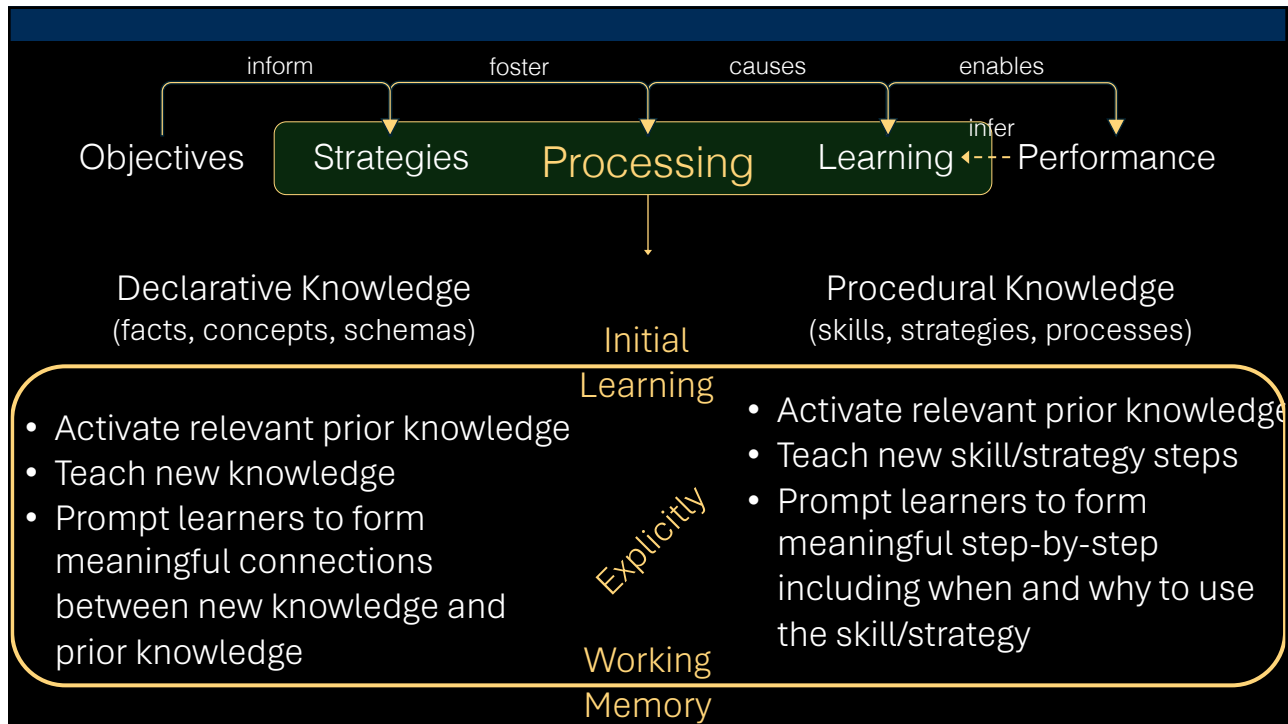
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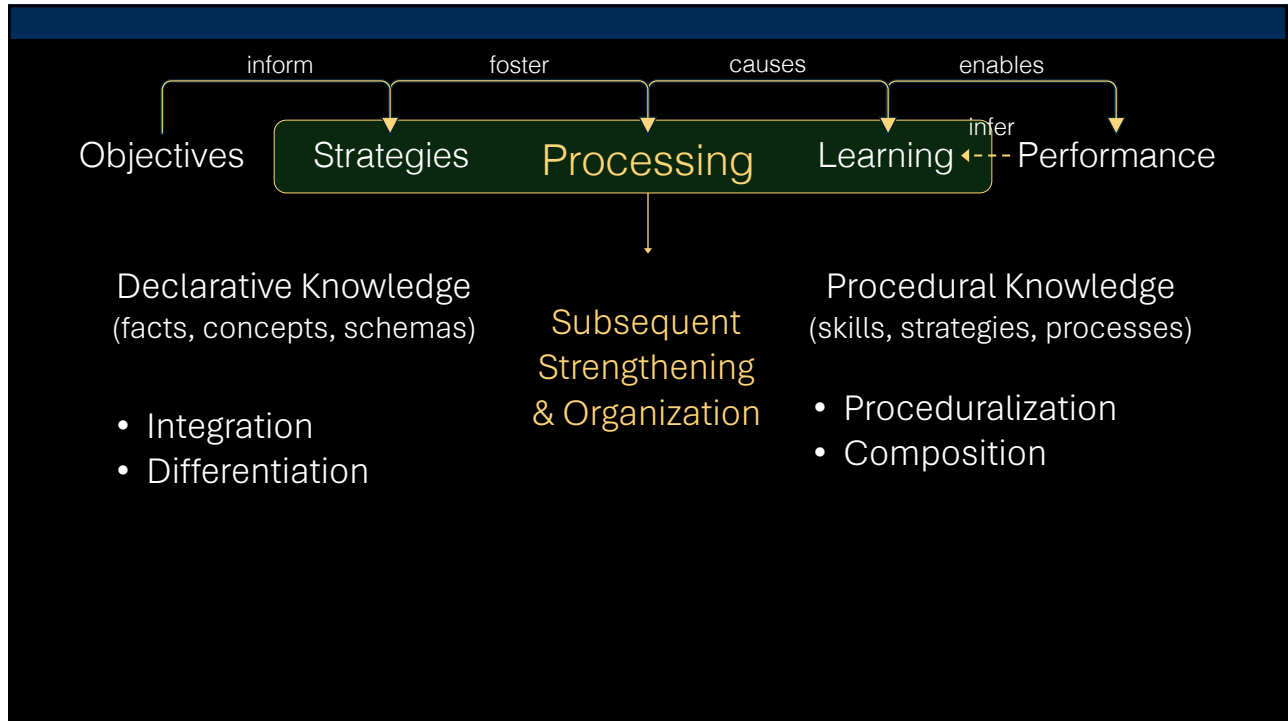
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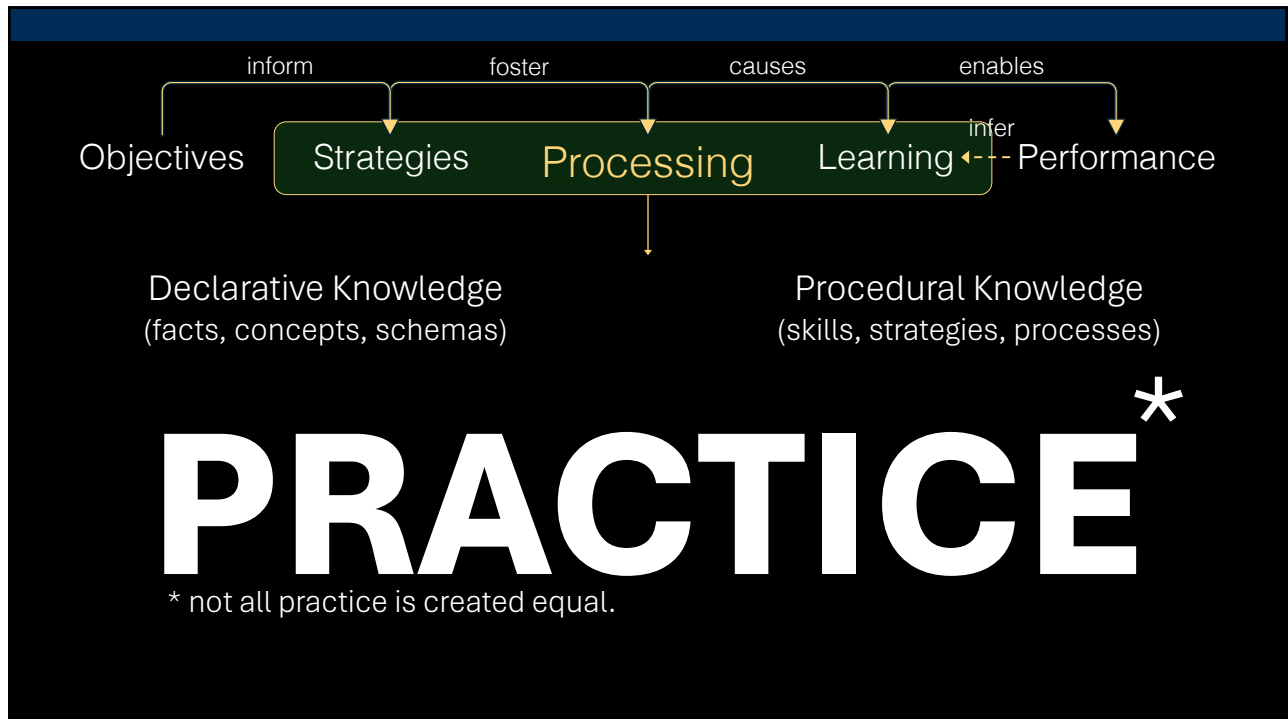
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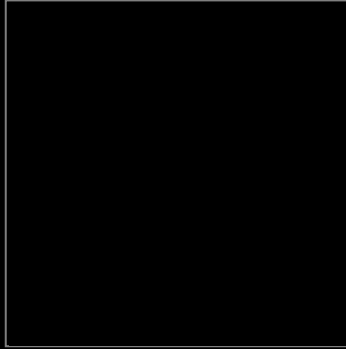
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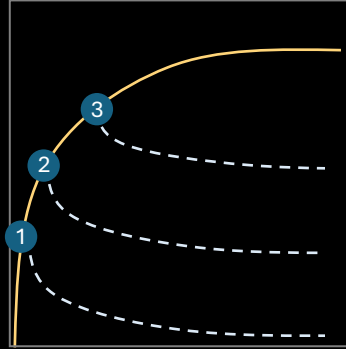
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If you're not learning, you're forgetting.

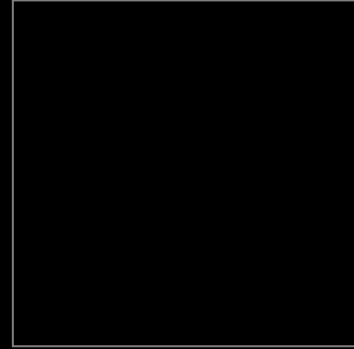
Practice → ↑ Learning & ↓ Forgetting



The Law of Learning



The Practice Effect

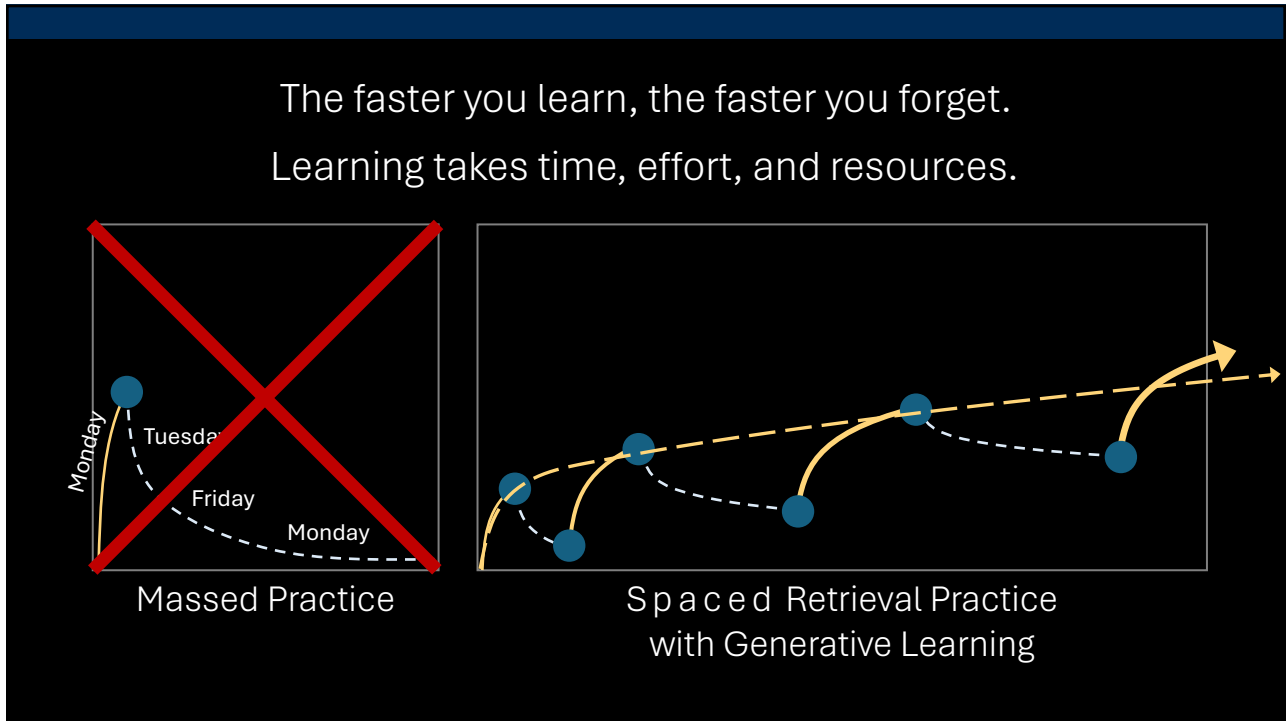


The Law of Forgetting

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## Declarative Knowledge

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Georges Seurat    Georges Seurat    Georges Seurat    Marilyn Mytrea    Marilyn Mytrea    Marilyn Mytrea    Georges Braque    Georges Braque    Georges Braque

AAA BBB CCC  
 Blocked Practice

Interleaved Practice  
 Interleave when information is highly similar and easily confused.

ACBCBAABC  
 Interleaved Practice

Georges Seurat    Marilyn Mytrea    Georges Seurat    Georges Braque    Marilyn Mytrea    Georges Braque    Georges Seurat    Georges Braque    Marilyn Mytrea

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This does not count as interleaved practice.



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## Roediger & Karpicke (2006)

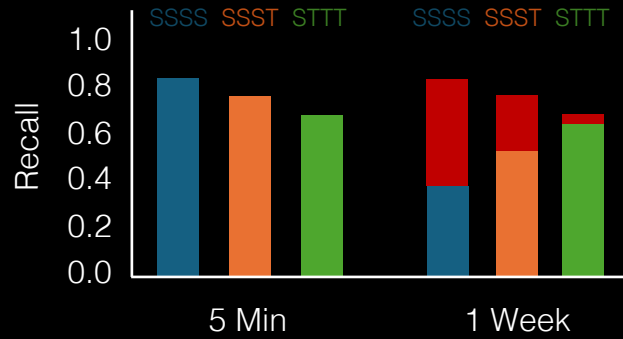
- Retrieval Effect
- 180 undergraduate students
- **Study** = reading a 265-word passage, repeatedly for 5 min
- **Test** = write down as much as could be remembered for 7 min
- **Recall** = write down as much as could be remembered for 10 min



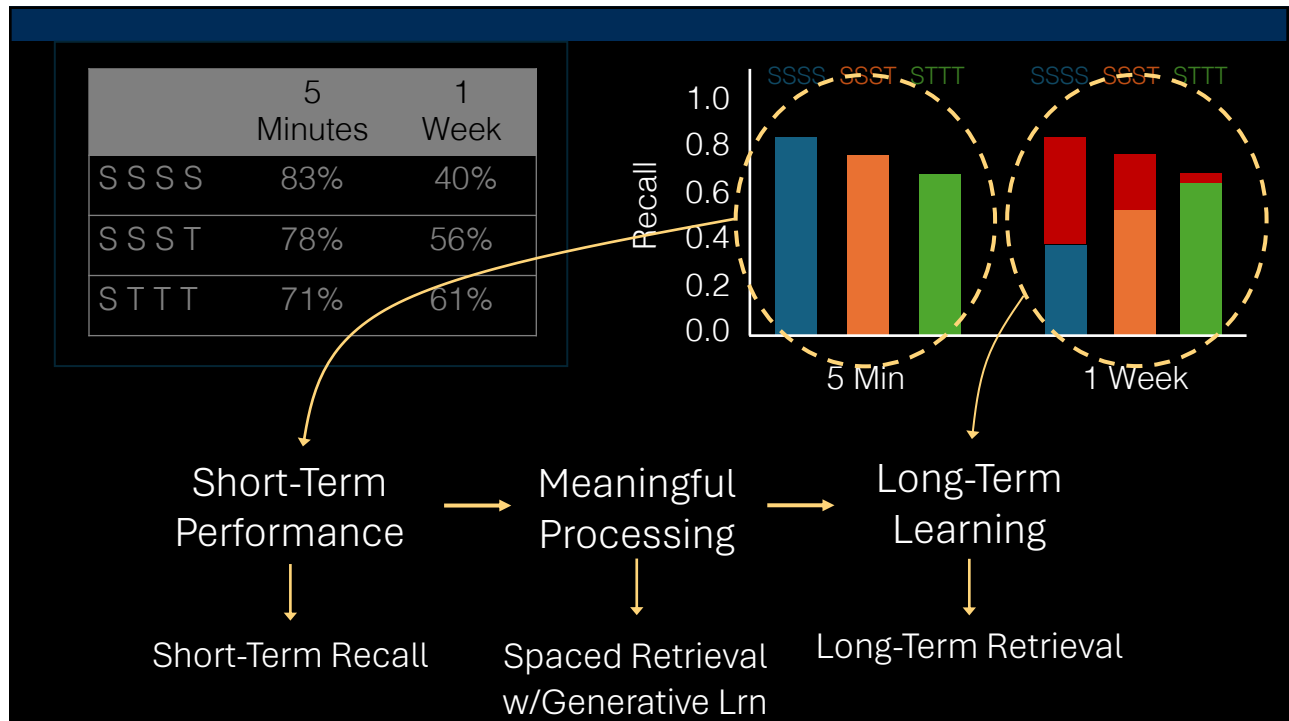
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# What did they find?

	5 Minutes	1 Week
SSSS		
SSST		
STTT		



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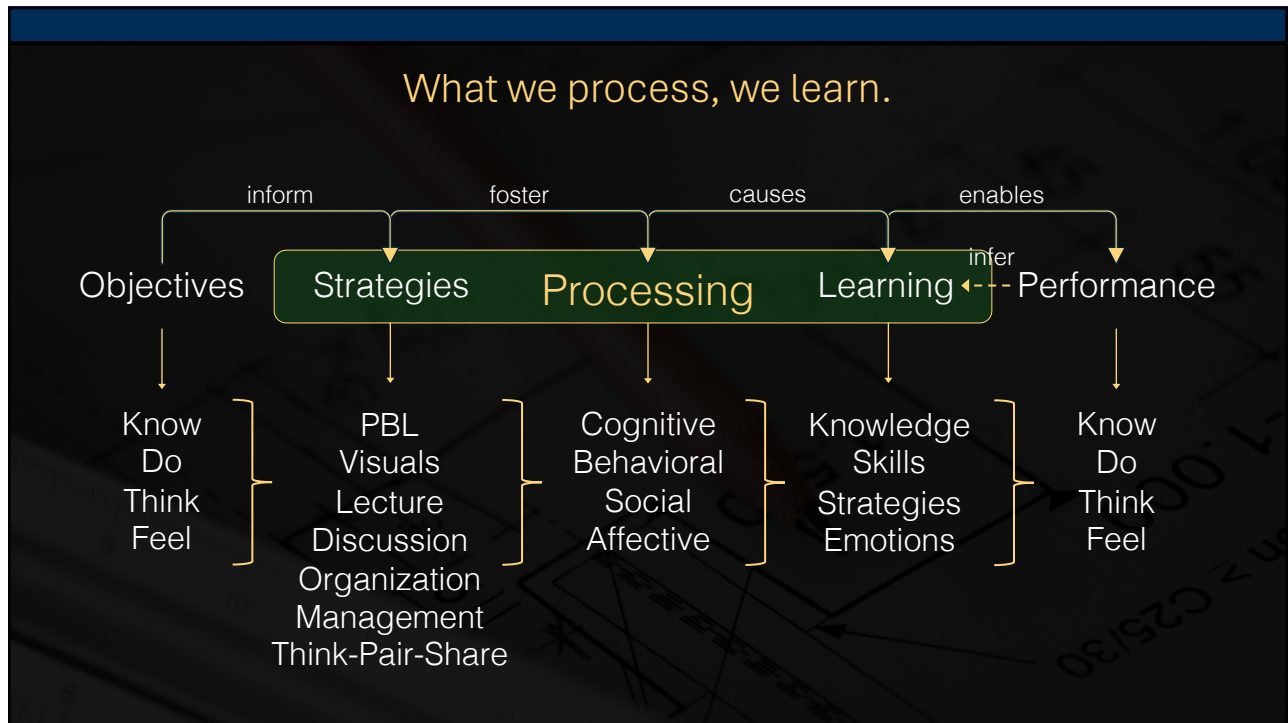
## Procedural Knowledge

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## Procedural Knowledge

	Support	Variable
<ul style="list-style-type: none"> <li>• <b>Examples:</b> Teacher demonstrates fully worked-out procedure; have student self-explain what they're seeing</li> </ul>	High	Low
<ul style="list-style-type: none"> <li>• <b>Guided Practice:</b> Student attempts procedure with scaffolded support and immediate feedback</li> </ul>	Med	Med
<ul style="list-style-type: none"> <li>• <b>Varied Application Practice:</b> Once student can complete the procedure, apply procedure to different contexts</li> </ul>	Low	High

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What we process, we learn;  
what AI processes, we don't.

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